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HOW TEACHERS
MAY USE FARMERS' BULLETIN 1175
BETTER SEED CORN

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UNITED STATES DEPARTMENT OF AGRICULTURE
DEPARTMENT CIRCULAR 156

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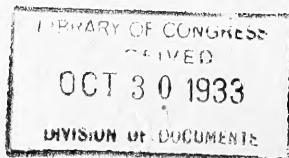
January, 1921

THE TEACHING OF AGRICULTURE in any community should have a vital connection with the problems of the farms of that community. Pupils are interested in those things about which they have some knowledge. The type of agriculture practiced in the community can be used to the best advantage in teaching. Therefore the teacher should organize the available subject matter which is of community interest and present it in such a manner that it will touch closely the life and experiences of the pupils. In order to do this the teacher should be familiar with the agricultural interests of the community.

For the purpose of assisting teachers in work of this kind circulars suggesting how teachers may profitably use information contained in certain publications of the United States Department of Agriculture are prepared from time to time. It is hoped that these circulars will serve to improve methods of instruction in agriculture and related subjects in the schools and that a closer relation will be established between the work of the school and the interests of the community.

While these circulars are prepared more especially for teachers in elementary schools, they may serve as a basis for instruction in agriculture in secondary schools in urban as well as in rural schools.

It is believed that the teacher of agriculture will be able to impress upon the minds of the pupils the value of better seed corn by giving emphasis to the topics of this circular.



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BETTER SEED CORN.

Range of use.—This bulletin is well suited for use in both rural and urban schools throughout the United States. It is also very valuable for use in district agricultural schools and in those high schools that give agricultural instruction. County agents, club leaders, and directors of farm-institute work will find it of very material assistance.

Relation to course of study.—This bulletin should be used to supplement the lessons on corn when the subject of seed selection is taken up as a class exercise. The selection of better seed corn is of vital importance to the productive capacity of our farms. Its principles should be taught and its advantages stressed whenever the subject of corn is treated in agricultural instruction. Many of the topics in this brief bulletin might profitably be elaborated by the teacher.

Illustrative material.—Samples of corn plants of varying degrees of perfection should be available for detailed class study. Sample ears of corn should be kept in the classroom for direct comparison. Likewise, small bottles or jars of kernels may be used for class study. Pictures of corn plants, fields under cultivation, methods of gathering seed ears, and the various testers should be obtained. Most of the State agricultural colleges can supply an abundance of illustrative material that will be found of great advantage to the teacher.

Suggestions to the teacher.—As much original work as possible should be done along the lines of "collateral study" suggested in this outline. Encourage the student to investigate for himself and to report to the class whatever he may have found of interest. Other additional studies than those herewith outlined will suggest themselves to the teacher and should be employed.

Topics for study—

I. Low yields due to poor seed. Page 3.

- (1) Average per acre yield in the United States.
- (2) Scarcity of good seed corn—
 - (a) Due to delay in selecting seed.
 - (b) Due to negligence.

Collateral study.—Locate the area of greatest corn yield in the United States. In your own State.

II. Where to obtain good seed corn. Pages 3-5.

- (1) Autumn is the time to prepare for next season's profitable corn crop.
- (2) Seed obtained from the home corn field.
- (3) Seed obtained from experienced corn breeder.
- (4) The specialized work of corn breeding—
 - (a) Value of seed thus obtained.
 - (b) Danger if seed is allowed to "run out."

Collateral study.—Observe the seed-selecting work of farmers who make a specialty of corn-seed selection. Locate corn fields that show evidences of a "run-out" seed condition.

III. Characteristics of good seed corn. Pages 5, 6.

- (1) Climatic and soil factors—
 - (a) Variation in yield due to geographic conditions.
- (2) High-yielding varieties—
 - (a) Producing ability from high-yielding rows.
 - (b) Producing ability from high-yielding plants.
- (3) Well-matured and well-preserved ears for planting—
 - (a) Importance of care of gathered seed ears.
- (4) Freedom from disease and insect injury—
 - (a) Lowered vitality of corn.
 - (b) Lowered reproductive power.

Collateral study.—From Government records note the difference of yield in the same variety (e. g., Flint, etc.) due to geographic location. Note the increased yield due to care of seed corn as shown in neighboring fields.

IV. How to gather seed corn. Pages 7-9.

- (1) Select only from best-producing plants—
 - (a) Use of picking bag.
- (2) Select from well-balanced stalk—
 - (a) Two-ear stalk most desirable.
- (3) Select early-maturing plants—
 - (a) Danger in late-maturing plants.
- (4) Select thick stalks—
 - (a) Especially in Central and Southern States.
- (5) Select with use in view—
 - (a) For grain—early-maturing variety.
 - (b) For ensilage—later, ranker variety.
- (6) Select seed for two years' planting—
 - (a) Value for acclimatizing yield.
- (7) Select from those plants showing resistant qualities—
 - (a) To diseases.
 - (b) To insects.
- (8) Select from stalks having few or no suckers.

Collateral study.—Remove a well-developed corn plant from the ground and compare with a poor plant. Note position of ears, color of foliage, strength of stems, presence of disease, shape, and size of kernels.

V. Treatment of seed immediately after gathering. Pages 9-11.

- (1) Husk as soon as ears are gathered.
- (2) Put in dry place.
- (3) Allow free circulation of air.
- (4) Do not allow ears to touch each other.

V. Treatment of seed immediately after gathering—Continued.

- (5) Loss of vitality—
 - (a) By contact in sacks or piles.
 - (b) Through heat and moisture.
- (6) Methods of drying—
 - (a) With cords.
 - (b) With wire racks.

Collateral study.—Visit some farmer who carefully selects and stores his seed corn. Note the way in which he preserves the ears. Compare the various methods found for advantages and disadvantages.

VI. Winter storage. Page 11.

- (1) Drying the ears.
- (2) Keep from moisture.
- (3) Store in rat-proof boxes or barrels.

Collateral study.—Construct simple bins for seed corn that will be rat proof. Compute the size of a bin needed for an acre of corn; for 10 acres.

VII. Preventing insect injury. Page 11.

- (1) From weevils—
 - (a) Carbon bisulphid.
 - (b) Airing after fumigation.
- (2) From grain moths—
 - (a) Use of moth balls.

Collateral study.—Carbon bisulphid and moth balls should only be used in air-tight receptacles. Compute the amount of bisulphid needed in the seed bin constructed. Learn all about this poison. Handle it with great care and according to directions.

VIII. Testing and grading seed corn. Pages 11–13.

- (1) Select best cared-for ears for testing and planting.
- (2) Seed-testing box.
- (3) Rag-doll tester—
 - (a) Select 10 kernels from each ear for testing.
 - (b) Keep careful records.
 - (c) Save for planting only those ears that test out at least 70 per cent of germination.
- (4) Grade before ears are shelled—
 - (a) According to size of kernels.
 - (b) Separate grades and test for corn planter.
 - (c) Use those kernels only that correspond to number in planter plates.

Collateral study.—Construct both seed-testing boxes and rag-doll testers. Note the various ways progressive farmers test seed corn. Study carefully the structure and manner of working of a modern corn planter.

IX. Methods of shelling seed corn. Pages 13, 14.

- (1) Remove small kernels from tops of ear—
 - (a) Less productive than others.
- (2) Remove thick kernels from butts of ears—
 - (a) Do not drop uniformly through planter.
- (3) Shell remaining kernels by hand—
 - (a) Shell into a sieve.
 - (b) Reject all imperfect kernels.

Collateral study.—Compare the imperfect with the perfect kernels, for shape, size, weight, etc. Note any diseased kernels and learn the nature of the disease and how to prevent it.

Practical exercises.—1. From returns obtained from farmers compute the average yield of corn per acre for the school district. Compare this with the census returns for 1910 and 1920 for the State and for the United States.

2. Mark 100 corn plants from the home cornfield for next year's seed. Select the best 50 ears from these plants for seed testing.

3. Make a report on the average corn yield per row from some neighboring cornfield.

4. Describe in a written composition how seed corn should be selected in the field.

5. Build a wire rack for drying corn.

6. Construct rat-proof boxes for storing seed corn.

7. Make a survey of the way farmers protect their seed corn from weeds and moths.

8. Construct a seed-testing box and test out 10 ears of corn.

9. Construct a rag-doll tester and test out 10 ears of corn.

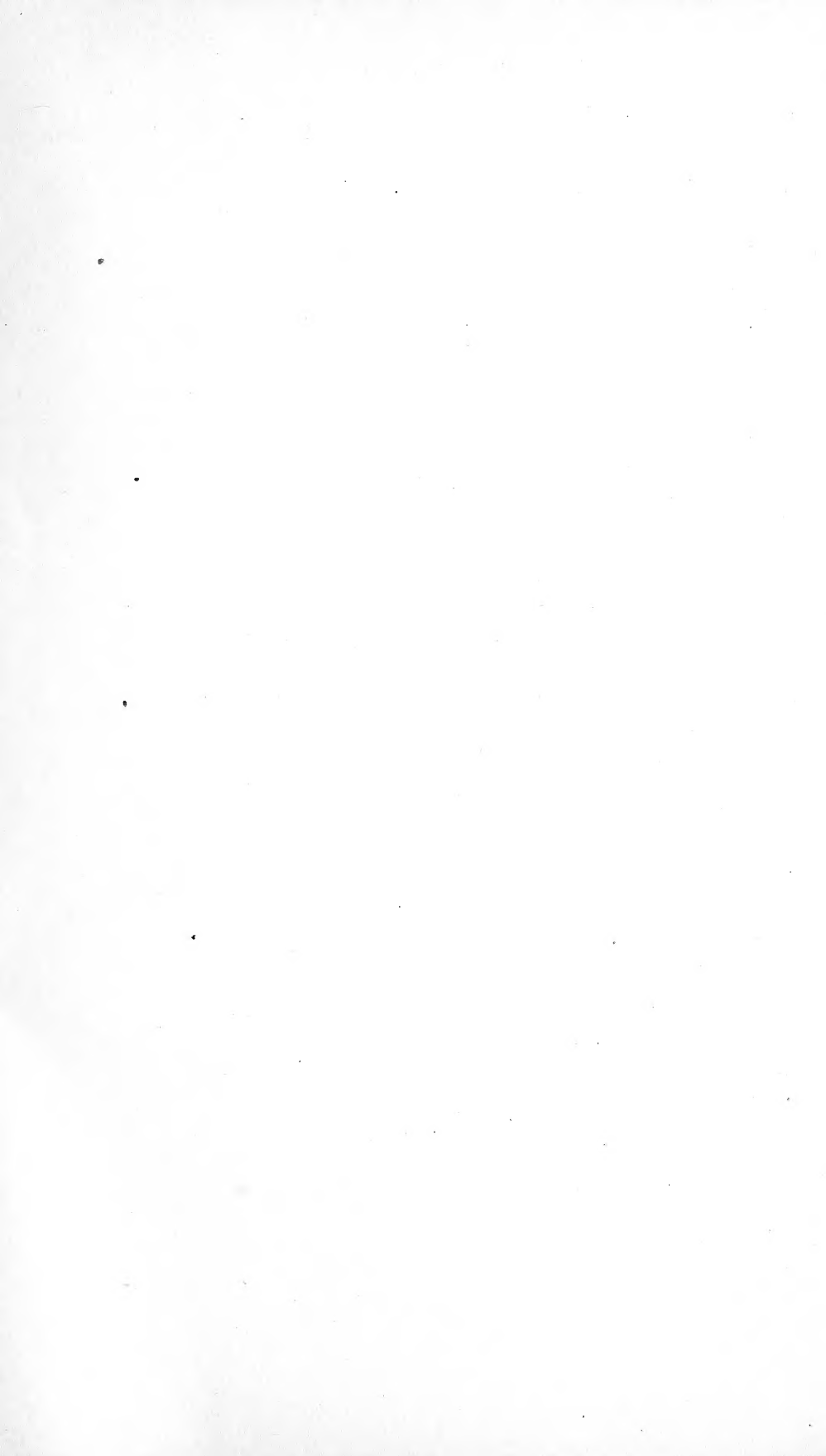
10. Grade 50 ears of corn, separating grades for the corn planter.

Correlations.—History: Study the history of the corn plant, its discovery, development, and methods of its improvement.

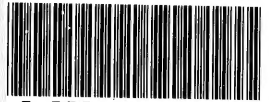
Language: Keep carefully written records of all individual exercises and collateral studies.

Arithmetic: Have all computations carefully and neatly made. Percentage tables should be made of all germination tests.





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